

# LE “LOUIE” CAI

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## EDUCATION

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University of California, San Diego, Data Science B.S.

Sept 2020 – Jun 2024 (Planned)

- **GPA:** 3.77
- **Relevant Coursework:** Machine Learning, Deep Learning, NLP, Data Analysis, Computer Organization and Systems Programming, Data Structures & Object-Oriented Design, Differential Equations, Linear Algebra, Probability and Statistics, Discrete Mathematics, Components and Design Techniques for Digital Systems

## SKILLS

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- **Programming Languages:** Python, R, SQL, Java, C, C++, C#, Bash, HTML, CSS, Typescript
- **Machine Learning/Big Data:** Machine Learning, Deep Learning, pandas, NumPy, matplotlib, scikit-learn, PyTorch, BeautifulSoup4, Request, Selenium, Plotly, FastAPI
- **Framework/Tools:** React, JavaFX, Unity, Linux, Docker, Blender, Gradle, Vim, Git, Jupyter

## EXPERIENCE

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Amazon

Jun – Sept 2023

Software Development Engineer Intern

- Utilized React and TypeScript to streamline backend database onboarding with a front-end internal tool.
- Collaborated in an Agile team to ensure responsive and user-friendly interfaces.
- Optimized tool performance using Git, resulting in significantly improved loading times.

## PROJECTS

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Convolutional Neural Network Image Classification

Feb 2022

- Engineered a bespoke convolutional neural network using PyTorch to classify 20 distinct categories of food images.
- Orchestrated the development and training of the neural network with PyTorch and CUDA, systematically refining network performance through architectural adjustments and hyperparameter tuning.
- Visualized and conducted in-depth analysis of feature maps and filters using Matplotlib.

Twitter Sentiment Analysis API

Jul 2022

- Engineered a highly configurable LSTM model for sentiment analysis of Twitter tweets, categorizing them into distinct sentiment categories. Additionally, designed and implemented an API using FastAPI that delivers sentiment analysis results in the form of response JSON objects.
- Conducted an extensive hyperparameter optimization process by training a diverse set of 1000 LSTM models using grid search techniques, ultimately identifying the optimal model configurations for enhanced performance.

Minecraft Mod Development

Jun – Dec 2020

- Achieved over **2.9 million** downloads on [CurseForge](#) for the Minecraft plugin developed.
- Engineered a plugin to enhance the player experience in Minecraft by introducing interactive in-game items.

Tiktok Reddit Video Automator

Aug – Dec 2022

- Developed a Python script that efficiently downloads trending videos from subreddits using the Reddit API and subsequently automates their upload to TikTok accounts through Python and Selenium.
- Deployed and configured the script on a server, enabling automated video posting with customizable settings, including rest intervals and target subreddits.

## ACTIVITIES

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IEEE F1TENTH IV2023 Championship - Anchorage

Jun 2023

- Constructed two autonomous 1/10 scale RC cars, each equipped with LiDAR sensors and cameras, enabling precise navigation on a racetrack.
- Led the development of advanced navigation algorithms using ROS2 and DonkeyCar.
- Represented UC San Diego and secured fourth place in the championship.